

Solicitation Number: 06-0001-16
PLUS-HFS Support Services for the Office of Naval
Research for the Ocean Battlespace Sensing S&T
Department (Code 32).

The statement of work, order information, proposal submission requirements, and evaluation information are set forth below. Proposals from holders of ONR Multiple Award Contracts (MATOC) for support services under CLIN 0001 – Technical Programmatic and Engineering Support Services are due by 2:00 PM (EST), 19 May 2006.

1.0 Background

ONR's Ocean Battlespace Sensing S & T Department, Code 32, sponsors the Persistent Littoral Undersea Surveillance Innovative Naval Prototype (PLUS INP), an initiative to expand the Navy's capability in undersea surveillance. The Persistent Littoral Undersea Surveillance (PLUS) Program seeks a high fidelity, physics based, synthetic environment simulation capability that can be utilized to evaluate and quantify the performance tradeoffs of a distributed, mobile sensing system for persistent (months) wide area (100nm x 100nm) ASW surveillance. This PLUS High Fidelity Simulator (PLUS-HFS) will provide the ability to assess aperture re-configuration through adaptive feedback against baseline fixed-node arrays in the context of expected threat scenarios and realistic environments. PLUS-HFS will be able to simulate all aspects of a proposed distributed system's performance and identify key technology and environmental limitations to help focus and prioritize engineering and experimental plans. Demonstrated experimental results shall be incorporated into PLUS-HFS to refine the system performance in a phased development process starting with a building-block Adaptive Wide-Area Cluster for Surveillance (AWACS) covering a limited volume of ocean, expanding to an Adaptive Wide-Area Constellation enabling Sea Power 21 Hold-at-Risk strategies. The simulation capabilities should include system detect-classify-localize-track (DCLT) performance measures throughout the field as a function of the AWACS architecture and operational constraints including re-configuration response time; endurance; communication (acoustic and RF) bandwidth and latency; and ocean variability (currents, sound speed field, bottom characteristics, ambient noise).

This is a new requirement with no prior procurement history.

2.0 Statement of Work

2.1 Objective

PLUS-HFS shall be based on commercial-off-the-shelf (COTS) components that are scalable to address problems at varying levels of complexity. To the greatest extent possible PLUS-HFS shall utilize Navy standard models and databases to generate the high fidelity synthetic ocean and acoustic environments, for example the Parabolic Equation (PE) model and the Comprehensive Acoustic System Simulation (CASS) model. PLUS-HFS shall include range dependent passive and active acoustics incorporating the following elements into the simulation:

- Bottom Bathymetry (DBDB.xxx)
- Gridded Sound Speed (MODAS Fields, JJXX, and JJYY)
- Bottom and Surface Loss
- Volume Attenuation
- Volume, Surface, and Bottom Backscattering
- Ambient and Directional Noise (DANM model)

2.2 Scope

PLUS-HFS will have the capability to generate accurate sensor level acoustic signature data that can be utilized to evaluate signal processing algorithms, beamformer algorithms, and next generation acoustic sensor designs prior to going to sea. The resolution of the generated data must be capable of showing the following effects to accurately evaluate the effectiveness of sensor and algorithm designs:

- Multi-path interference
- Swaths
- Doppler effects
- Diurnal effects
- Interfering contacts
- Platform generated noise
- Biological noise
- Short duration transients

The time series generation component of the proposed system shall include an Office of Naval Intelligence (ONI) approved target generation capability (MicroDASS) to generate simulated acoustic signals prior to propagating them through the environment. Capabilities shall be included to model

unspecified sensor configurations including linear, planar, and spherical arrays, and multiple AWACS with cooperative behaviors.

2.3 Technical Tasks/Requirements/Deliverables

This PLUS-HFS overall effort should be partitioned into a series of sequential tasks with associated separate budgets.

Task 1 should include a detailed requirements analysis for the PLUS-HFS system covering five major areas: (1) Simulation Control and Execution, (2) Sensors and DCLT, (3) Control, Autonomy, and Energy Management, (4) AWACS and Field DCLT, and (5) Communications. A set of operationally relevant baseline scenarios should be developed to illustrate required PLUS-HFS temporal and spatial simulation capabilities. Requirements for broad band and narrow band acoustic processing as well as non-acoustic processing should be considered. Deliverables are a System Requirements Review (SRR) and associated report. Task duration 6 months.

Task 2 should include the design of a prototype PLUS-HFS capitalizing on existing simulations, models, and databases. Cost effective ways to integrate existing components into a comprehensive simulation on a common hardware platform should be demonstrated. The design will identify required model enhancements, control and execution drivers, and incorporate hooks for extending and adapting the system. Deliverables are Preliminary and Final Design Reviews and a well-documented design blueprint with detailed component specifications. Task duration 6 months.

Task 3 will produce a prototype PLUS-HFS system based on the design delivered in Task 2. This prototype will provide simulation capability for all variables outlined in the baseline scenarios developed under Task 1. This prototype will run efficiently on an integrated hardware platform. Prototype PLUS-HFS results will be quantitatively compared to MB06 data and simulate performance of planned FY07 field experiments. Deliverables are a fully documented prototype PLUS-HFS system including source code and an associated report analyzing its performance using MB06 and other available in-situ data sets. Task duration 6 months.

3.0 Personnel Requirements

3.1 Personnel Qualifications

The Contractor shall provide qualified personnel to manage and execute all aspects of the statement of work. All personnel must be thoroughly familiar and proficient in the use of commercial software packages such as Microsoft Word, Project, Excel and PowerPoint.

3.2 Level of Effort The level of effort is estimated at 2-3 man-years per year.

4.0 Order Details

4.1 Contract Type: The Navy anticipates awarding a cost plus fixed fee level of effort task order.

4.2 Period of Performance: Date of award through eighteen (18) months.

4.3 Other Direct Costs (ODCs)

ODCs (including supplies, travel, etc.) will be reimbursed at cost plus G&A without profit or fee. Purchases of items (other than consumable materials or supplies) exceeding \$2,500 and all travel must be approved in advance by the Contracting Officer's Representative (COR).

The total ODC amount, including G&A, is not to exceed (NTE), \$10,000 per year. At this time, the specific items cannot be identified; however, the ODC total cannot exceed the NTE amount stated in this section.

This NTE amount should be proposed and included as part of the cost total (without profit or fee) in every proposal submitted under this solicitation.

Travel may or may not be required to support this Statement of Work. In accordance with the contract requirements, direct costs associated with the Contractor's travel, including per diem, shall not exceed the applicable rates found in the Federal Travel Regulation (FTR) and/or the Joint Travel Regulations (JTR). All travel arrangements under the Contractor's responsibility include: clearance requests, hotel accommodations, travel orders, and visa/passport requirements, unless otherwise stated by the Government sponsor.

4.4 Place of Performance: Work will normally be performed at the Contractor's facilities.

4.5 Government Furnished Resources (GFR): The Government will provide information, material and forms unique to the Government for supporting the task. The Government furnished resources necessary to perform the statement of work should be identified and requested through the designated Contracting Officer's Representative (COR).

4.5.1 Facilities, Supplies and Services: The facilities required to perform the tasks outlined in the Statement of Work will be at the Contractor's place of business.

4.5.2 Information: All Government unique information related to this requirement necessary for Contractor performance will be made available to the Contractor. The Contracting Officer's Representative (COR) will be the point of contact for identification of any required information to be supplied by the Government.

4.5.3 Documentation: All existing documentation relevant to this task's accomplishment will be made available to the Contractor at the beginning of the task. The Contractor will be required to prepare documentation in accordance with defined guidelines provided by the Government.

4.5.4 Equipment: With the exception to the basic facility items noted Subsection 4.5.1, and in accordance with the general guidance in FAR Part 45.102, Contractors are required to furnish all property necessary to perform on Government contracts or orders. PC's should not be proposed as a direct charge under this solicitation.

4.6 Subcontracts/Consultants: Contractor may request or propose, on a case-by-case basis, subcontract/consultant support for specific technical tasks.

4.7 Security Requirements:

a) Clearance Requirements. No classified information or requirements are anticipated. The Contractor is required to safeguard the information labeled as proprietary.

b) Privacy Act. All Contractor personnel assigned to this task will have access to information that may be subject to the Privacy Act of 1974. The Contractor is required to ensure the proper safeguarding of such information to prevent unauthorized release.

5.0 Proposal Requirements

5.1 Proposal Format: The Offeror's proposal must be divided into two sections: (1) Technical Proposal, and (2) Cost Proposal. Information for the technical portion shall be a separate and segregable document from the cost proposal. No cost information should be included in the technical section. The length of the technical proposal shall not exceed ten (10) pages, exclusive of resumes. There are no page limits on the number of resumes or the pages of the cost proposal. The proposal should be written and organized to be compatible with the Statement of Work, company's organization and accounting structure, and proposed cost.

(a) Technical Proposal: The technical proposal should include the following: The Offeror's understanding of and approach to the requirement, resumes of proposed personnel, and the amount of proposed hours for personnel. The Offeror should describe specifically how the work activities required to complete the tasks in the statement of work will be done. The Offeror should explain how technical objectives, tasks and deadlines will be determined; how staff responsibilities will be assigned; whether and to what degree consultants and/or subcontractors will be utilized; how the quality and timeliness of work performance will be supervised and controlled; how the Offeror will coordinate with the program office; how a surge capacity will be maintained to meet unanticipated requirements; and how administrative tasks such as travel, security and resource requests will be handled.

The Offeror should include information relative to previous efforts for the same or similar services provided in the past to include contract numbers and Government points of contact where applicable.

The Offeror should explain what corporate facilities are available and would be used in support of the work including computer resources, publication/media materials and equipment where appropriate. The proposal should acknowledge that the Contractor will provide the appropriate IT/telecommunications equipment for the proposed personnel for this task order.

(b) Cost Proposal: The Offeror should submit a cost proposal that itemizes the following proposed costs (as applicable): direct labor (including each labor category with associated proposed hours and hourly rate), fringe benefits, labor overhead, consultants, subcontracts, subcontractor/consultant handling charges, G&A, cost of money, fixed fee and any other relevant cost categories. The Offeror should also include the estimated Travel and ODC amounts set forth in the "Other Direct Costs"

section of the solicitation as part of its proposed costs. The base calculation and rates must be provided for all indirect cost items. Subcontract cost information containing the same type of details described above for the prime must be provided either with the prime's proposal or in accordance with section 5.3 of this solicitation before the solicitation due date and time.

If available and applicable, the Contractor should also provide its Defense Contract Audit Agency (DCAA) point of contact, including the Branch Office name, auditor name, phone number and e-mail address.

5.2 Other Required Documents: Offerors should be aware that, upon receiving an award, the following additional documentation will be required:

5.2.1 RESERVED

5.3 Proposal Submission: The due date for receipt of proposals for this solicitation is no later than 2:00 PM (EST) on 19 May, 2006. All proposals must be uploaded electronically via the "[Upload Proposals](#)" hyperlink, which is under the hyperlink for this solicitation on ONR's MATOC website. (Note: this site restricts the formats of uploaded documents to those in MS Word, MS Excel, or PDF.)

6.0 Evaluation Information

6.1 Evaluation Criteria: A Task Order will be awarded to the responsible offeror whose offer represents the best value to the Government. In order to determine which offeror represents the best overall value, offers for individual task orders will be evaluated on the following Technical and Price/Cost Factors:

Technical Factors

- (1) Proposed personnel
- (2) Management Plan and Technical Approach
- (3) Past performance on earlier tasks under this and similar contracts
- (4) Corporate Facilities

Price/Cost Factors

- (5) Cost

The Government will make a determination of the overall value of each proposal in terms of its potential to best satisfy the needs of the Government, considering both Technical and Cost Factors.

The Offeror's technical capability (as measured by the Technical Factors) and Cost Factor are equal in importance. In regards to the stated Technical Factors, Technical Factor 1 is of the greatest weight; Technical Factors 2 through 3 are equally weighted. Technical Factor 4 is of less value than all other Technical Factors.

In evaluating past performance on individual orders, the procedural requirements in FAR 42.15 are not mandatory. Past performance will be based on the Government's subjective evaluation of the Contractor's performance with previous orders, if any, under this contract and similar contracts.

6.2. Award: The Government will award a task order to the responsible Offeror whose offer conforming to the solicitation will be most advantageous to the Government, cost and other factors considered. The anticipated award and start date of this Order is on or about 5 Jun 2006.

7.0 Submission of Questions: Any questions regarding this solicitation must be provided in writing to the Point of Contact listed below. Acceptable forms of written question submission include fax and e-mail. Questions submitted less than 72 hours prior to the closing date for proposals may not be answered and the due date for submission of proposals may not be extended.

8.0 Solicitation Amendments: Any amendments to this solicitation will be posted along with the solicitation on the ONR website. It is the Offeror's responsibility to regularly check for any postings of solicitations, amendments, and questions and answers under this or any other MATOC Solicitation.

9.0 Point of Contact: The Point of Contact for this solicitation is Ellen Simonoff, ONR Code 252, 703-696-0157, SimonoE@onr.navy.mil.